

S/190/62/004/005/014/026
B110/B108

Synthesis of new derivatives of ...

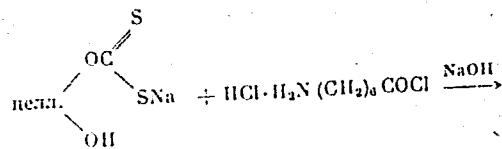
(b) The condensation of a dimethyl formamide solution of the hydrochloride of the chlorine anhydride of low-molecular polyenanthamide (polymerization coefficient = 12 - 15) with cellulose also failed. (c) Equilibrium is established between the hydrochloride of aminoanthic acid chloride and free amino acid:

$\text{ClH}_3\text{N}^+(\text{CH}_2)_6\text{COCl} + \text{C}_6\text{H}_5\text{N}^+\text{HCl}^- \rightleftharpoons \text{H}_2\text{N}(\text{CH}_2)_6\text{COCl} + \text{C}_6\text{H}_5\text{N}^+\text{HCl}^-$. The quantity of the resultant graft copolymer of cellulose increases with increasing quantity of pyridine and increasing content of free amino acid. In the presence of 10 - 12 moles of pyridine per elementary link of the cellulose macromolecule, the cellulose ester of aminoanthic acid is formed. The graft copolymer is only obtained with more than 20 moles of pyridine. (d) The following reactions take place between poorly esterified cellulose xanthate dissolved in an aqueous alkali solution and the hydrochloride of aminoanthic acid chloride:

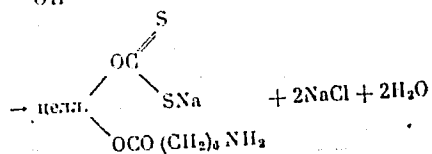
Card 2/4

Synthesis of new derivatives of ...

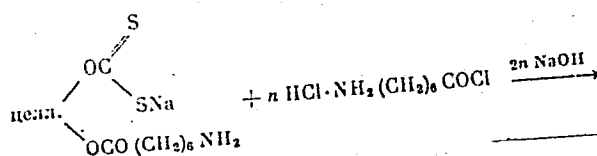
S/190/62/004/005/014/026
B110/B108



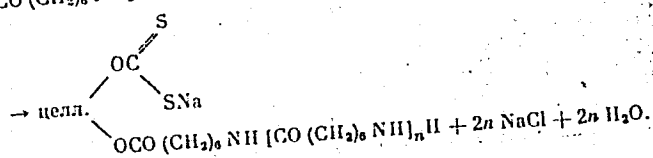
(A)



and



(B)



(C).

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Synthesis of new derivatives of ...

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The treatment took 10 min at 0 - 5°C. The graft copolymer formed at the interface of the two reactants is treated with dilute H_2SO_4 and with a 20 % methanol solution of $CaCl_2$. This method of synthesizing graft copolymers at the interface can also be used for synthesizing graft heterochain copolymers of various water- and alkali-soluble polymers containing reactive OH groups, such as starch, amylose, and polyvinyl alcohol. The formation of certain amounts of homopolyamide, however, cannot be prevented. There are 3 tables.

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: April 3, 1961

Card 4/4

POGOSOV, I.L. [Pogosov, Yu.L.]; ROGOVIN, Z.A.

Progress made in the field of the synthesis of polysaccharides.
Analele chimie 17 no.2:42-66 Ap-Je '62.

ROGOVIN, Z.A., doktor tekhn.nauk

Trends in the development of the chemistry of cellulose. Vest.
AN SSSR 32 no.1:24-29 Ja '62. (MIRA 15:1)
(Cellulose)

ROGOVIN, Z.A., doktor tekhn.nauk

Symposium on chemical fibers. Vest.AN SSSR 32 no.7:89-90 J1 '62.
(MIRA 15:7)

(Textile fibers, Synthetic—Congresses)

ROGOVIN, Z.A., prof.


Problems in the modern chemistry of cellulose. Zhur.VKHO 7
no.2:154-163 '62. (MIRA 15:4)
(Cellulose)

S/080/62/035/008/007/009
D267/D308

AUTHORS: Wu, Mei-yen, Zharova, T., and Rogovin, Z.A.

TITLE: Synthesis of the cellulose esters of methyl-phosphinic acid

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 8, 1962,
1820 - 1824

TEXT: The present work was carried out to obtain flameproof cellulose-base materials by treating bleached cotton fabric (calico, coarse calico) with methylphosphinic acid or its dichloroanhydride. Preliminary tests demonstrated that the incorporation of $\sim 2\%$ P ensures a complete non-flammability of the fabric. It is therefore necessary to use about 1 mole of methylphosphinic acid for 4-5 elementary units of the cellulose macromolecule. The esterification proceeds at a lower temperature and more rapidly if cellulose has been pre-treated with 10 % NaOH at 0°C , washed with water, methanol and benzene. It was found that only the neutral ester is formed when the esterification proceeds at the standard ($\sim 20^{\circ}\text{C}$) temperature, whereas the mixture of neutral and acid esters is obtained. 

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Synthesis of the cellulose esters ...

S/080/62/035/008/007/009
D267/D308

tained at higher temperatures (100°C). The treatment conducive to complete non-flammability reduces the strength of fibers. The partly esterified cotton fabric can be easily dyed with basic dyestuffs; it is also wash-, weather- and light-proof.

SUBMITTED: July 3, 1961

Card 2/2

KONOVALOV, Petr Gordeyevich; ZHEBROVSKIY, Vatslav Vatslavovich;
SHNEYDEROVA, Vera Vladimirovna; SOROKIN, M.F., retsenzent;
LYALYUSHKO, K.A., retsenzent; YAKUBOVICH, S.V., retsenzent;
ROGOVIN, Z.A., retsenzent; SOKOLOVA, N.A., red.

[Laboratory work on the chemistry of film-forming substances
and on the technology of coatings and paints] Laboratornyi
praktikum po khimii plenkoobrazuiushchikh i po tekhnologii
lakov i krasok. IAroslavl', Rosvuzizdat, 1963. 202 p.
(MIRA 17:5)

TUMANOV, A.T., glav. red.; VYATKIN, A.Ye., red.; GARBAR, N.I., red.; ZAYMOVSKIY, A.S., red.; KARGIN, V.A., red.; KISHKIN, S.T., red.; KISHKINA-RATNER, S.I., doktor tekhn. nauk, red.; PANSIN, B.I., kand. tekhn. nauk, red.; ROGOVIN, Z.A., red.; SAZHIN, N.P., red.; SKLYAROV, N.M., doktor tekhn. nauk, red.; FRIDLYANDER, I.N., doktor tekhn. nauk, red.; SHUBNIKOV, A.V., red.; SHCHERBINA, V.V., doktor geol.-miner. nauk, red.; SHRAYBER, D.S., kand. tekhn. nauk, red.; GENEL', S.V., kand. tekhn. nauk, red.; VINOGRADOV, G.V., doktor khoz. nauk, red.; NOVIKOV, A.S., doktor khoz. nauk, red.; KITAYGORODSKIY, I.I., doktor tekhn. nauk, red.; ZHEREBKOV, S.K., kand. tekhn. nauk, red.; BOGATYREV, P.M., kand. tekhn. nauk, red.; SANDOMIRSKIY, D.M., D.M., kand. tekhn. nauk, red.; BUROV, S.V., kand. tekhn. nauk, red.; POTAK, Ya.M., doktor tekhn. nauk, red.; KUKIN, G.N., doktor tekhn. nauk, red.; KOVALEV, A.I., kand. tekhn. nauk, red.; YAMANOV, S.A., kand. tekhn. nauk, red.; SHEFTEL', I.A., kand. khoz. nauk, st. nauchn. red.; BABERTSYAN, A.S., inzh., nauchn. red.; BRAZHNIKOVA, Z.I., nauchn. red.; KALININA, Ye.M., mlad. red.; SOKOLOVA, V.G., red.-bibliograf; ZENTSEL'SKAYA, Ch.A., tekhn. red.

[Building materials; an encyclopedia of modern technology] Konstruktsionnye materialy; entsiklopediia sovremennoi tekhniki. Glav. red. A.T.Tumanov. Moskva, Sovetskaia entsiklopediia. Vol.1. Abliatsiia - korroziia. 1963. 416 p. (MIRA 17:3)

1. Chlen-korrespondent AN SSSR (for Kishkin).

ACCESSION NR: AT4017405

S/0000/63/000/000/0003/0007

AUTHOR: Kozlova, Yu. S.; Pogadayeva, A. A.; Rogovin, Z. A.

TITLE: Synthesis of new derivatives of cellulose and other polysaccharides. XXVIII.
Synthesis of grafted cellulose copolymers with polyacrylic and polymethacrylic acids

SOURCE: Tsellyuloza i yeye proizvodny*ye, sbornik statey (Cellulose and its derivatives)
Moscow, 1963, 3-7

TOPIC TAGS: polysaccharide, cellulose, cellulose fiber, cellulose copolymer, grafted
polymer, polymer brittleness, synthetic fabric

ABSTRACT: While searching for cellulose fibers with improved properties (particularly dyeing with basic dyestuffs and resistance to microorganisms), the authors prepared a variety of copolymers, defined their composition and examined their properties. Of the two methods of synthesis tested first, a basic polymerization of acrylic and methacrylic acids in the presence of cellulose with ammonium persulfate as the initiator, and, second, a macroradical procedure after introduction of an aromatic amino-radical into the cellulose macromolecule followed by diazotization - the latter proved more adequate. The amount and the chain length of the polymer grafted into the cellulose were found to depend on the number of active centers in the cellulose macromolecule, the monomer

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ACCESSION NR: AT4017405

concentration in the solution, the temperature and duration of the reaction, and the nature of the monomer used. The grafted polymer yield may be brought up to 50-60% of the initial cellulose weight by expediently combining the conditions. However, it is not advisable to exceed a carboxyl group of 12-15% content because of the increasing brittleness of the product with a higher carboxyl content. The products obtained dye well and readily absorb moisture. A cellulose fabric containing grafted copolymers of this type shows increased resistance to microorganisms and readily exchanges cations. The synthetic procedure is given in detail. "A. Ya. Korotkova took part in the work. The cellulose fiber was treated by A. S. Kuznetsova in the Mikrobiologicheskaya laboratoriyaTsNIIIV (Microbiology Laboratory)." Orig. art. has: 3 tables.

ASSOCIATION: Moskovskiy tekstil'ny'y institut (Moscow Textile Institute)

SUBMITTED: 09Dec61

DATE ACQ: 06Jan64

ENCL: 00

SUB CODE: CH

NO REF SOV: 001

OTHER: 000

2/2

Card

ACCESSION NR: AT4017406

S/0000/63/000/000/0032/0036

AUTHOR: Lishevskaya, M. O.; Virnik, A. D.; Rogovin, Z. A.

TITLE: Synthesis of new derivatives of cellulose and other polysaccharides.
XXXI. Introduction of new functional groups into a macromolecule of modified cellulose containing aromatic amino groups

SOURCE: Tsellyuloza i yeye proizvodny*ye, sbornik statey (Cellulose and its derivatives). Moscow, 1963, 32-36

TOPIC TAGS: cellulose, polysaccharide, modified cellulose, cellulose derivative

ABSTRACT: This work was undertaken to explore the possibility of the synthesis of iodine-, thiocyno-, oxime-, aldehyde-, sulphydryl- and arylhydrazine-N',N''-disulfo- containing derivatives of cellulose, of which the one containing a sulphydryl group is of particular interest since this group imparts cation exchange ability to polysaccharide derivatives. Cellulose was alkylated with 4-~~hydroxy~~-ethylsulfonylanilinesulfate and diazotized, after which the product was: a) treated at 40C for 24 hrs. with aqueous solutions of KI (2.5-20%) to yield a product with 13.7% I; b) treated at room temperature for 24 hrs. with KSCN and FeCl₃ to yield a product with 3.06% SCN; c) treated at room temperature for 1 hr. with

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ACCESSION NR: AT4017406

formaldoxime in the presence of CuSO_4 and Na_2SO_3 to yield a product with 1.97% N; d) treated at room temperature for 0.5-24 hrs. with 0.6 - 9% Na_2S_2 to yield a product with 6.93% S and a cation exchange ability of 1.6 meq/g; e) treated at room temperature for 3 hrs. with 5% Na_2SO_3 to yield a product with 5.9% S. Orig. art. has: 2 graphs and 10 structural formulas.

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 09Feb62

DATE ACQ: 06Jan64

ENCL: 00

SUB CODE: OC, MT

NO REF SOV: 007

OTHER: . 002

Card 2/2

ACCESSION NR: AT4017407

S/0000/63/000/000/0037/0039

AUTHOR: Wu, Mei-yen; Tyuganova, M. A.; Gefter, Ye. L.; Rogovin, Z. A.

TITLE: Synthesis of new derivatives of cellulose and other polysaccharides.
XXXII. Synthesis of phosphorylated cellulose derivatives by transesterification

SOURCE: Tsellyuloza i yeye proizvodnyye, sbornik statey (Cellulose and its derivatives). Moscow, 1963, 37-39

TOPIC TAGS: polysaccharide, cellulose, phosphorylated polysaccharide, cellulose phosphate, phosphorylation, transesterification, fire resistance, synthetic fiber, nonflammable material

ABSTRACT: The preparation of nonflammable cellulose materials was attempted by means of transesterification using tri(β, β', β'' -chloroethyl) phosphite. By heating cellulose at 80, 110 and 130C for 5 and 8 hours in a 35-70% benzene solution of the phosphite, a series of cellulose esters was obtained with an average P-content of about 3% and a fire resistance of 90-130 by the American standard (W. Reeves, O. McMillan, J. Guthrie, Text. Res. J., 8, 527, 1957). Using 0.35% HCl and 2% CH_3COOH as catalysts, a P-content of 4% was obtained under less rigorous conditions. The esterification rate in air was about equal to that in argon. Prolonged exposure to air causes the trivalent phosphorus of the products to change to
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ACCESSION NR: AT4017407

pentavalent. In addition to the P-content in the product, fire resistance depends on the nature of the prevailing bonds, the C-P bond tending to increase resistance. Orig. art. has: 2 tables.

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 25Jan62

DATE ACQ: 06Jan64

ENCL: 00

SUB CODE: CH, MA

NO REF SOV: 005

OTHER: 001

Card 2/2

ACCESSION NR: AT4017408

S/0000/63/000/000/0044/0047

AUTHOR: Ivanov, N. V.; Rogovin, Z. A.; Andrianov, K. A.

TITLE: Synthesis of new cellulose derivatives and other polysaccharides. XXXIII.
Synthesis of silicon-organic derivatives of cellulose using organosiloxanes

SOURCE: Tsellyuloza i yeye proizvodny*ye, sbornik statey (Cellulose and its derivatives). Moscow, 1963, 44-47

TOPIC TAGS: cellulose, polysaccharide, silicon, silico-organic compound, siloxane, organosiloxane, hydrolysis, hydrolytic stability

ABSTRACT: The inadequate hydrolytic stability of many silico-organic derivatives of cellulose induced the authors to try to eliminate this deficiency by lengthening the silico-organic chain introduced into the derivative. By heating cellulose at 100-105C for 5 hours with α -chloro - ω - trimethylsiloxydimethylsiloxanes in pyridine, they obtained 5 derivatives with a Si content of 12.3, 20.6, 24.4, 24.3 and 23.1% and γ = 105, 52, 44, 30 and 20, respectively; their hydrolytic stability was then tested by heating in boiling water for 1 to 16 hours. The composition of the compounds is given, a theoretical explanation of their hydrolytic properties is suggested, and the conclusion is drawn that the hydrolytic stability of the

$\geq \text{Si}-\text{O}-\text{C} \leq$ bond increases as the length of the radical chain increases.

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ACCESSION NR: AT4017408

Orig. art. has: 2 tables, 1 graph, and 2 structural formulas.

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 16Apr62

DATE ACQ: 06Jan64

ENCL: 00

SUB CODE: CH

NO REF SOV: 003

OTHER: 003

Card 2/2

ACCESSION NR: AT4017409

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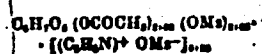
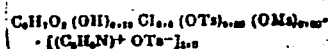
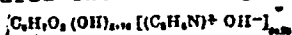
AUTHOR: Kryazhev, Yu. G.; Polyakov, A. I.; Rogovin, Z. A.

TITLE: Synthesis of new derivatives of cellulose and other polysaccharides.
XXXIV. Synthesis of cellulose derivatives with nitrogenous heterocyclic rings.

SOURCE: Tsellyuloza i yeye proizvodny*ye, sbornik statey (Cellulose and its derivatives). Moscow, 1963, 48-54

TOPIC TAGS: cellulose, polysaccharide, cellulose derivative, nitrogenous cellulose derivative, heterocyclic cellulose derivative, sandwich polymer, grafted copolymer

ABSTRACT: The authors prepared the following five nitrogenous, heterocyclic cellulose derivatives:



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ACCESSION NR: AT4017409

in which Ms and Ts stand for the mesyl and tosyl esters of cellulose, respectively, by alkylating these esters with pyridine, piperidine and pyrrolidine and by the condensation of dialdehyde cellulose with the quaternary salt of 2-methyl-5-ethylpyridine. Alkylation and condensation reactions were also used to prepare grafted cellulose copolymers of the sandwich type with poly-2-methyl-5-vinyl-pyridine. The reaction conditions are described in detail and data on the chemical composition, degree of polymerization and cation exchange activity of the products are tabulated. Orig. art. has: 2 tables and 3 chemical equations.

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 24Apr62

DATE ACQ: 06Jan64

ENCL: 00

SUB CODE: OC, MT

NO REF SOV: 005

OTHER: 003

Card 2/2

S/0000/63/000/000/0055/0059

ACCESSION NR: AT4017410

AUTHOR: Sletkina, L.S.; Bargamova, M.D.; Rogovin, Z. A.

TITLE: Synthesis of new derivatives of cellulose and other polysaccharides. XXXVI.
Synthesis of a mixed acetic and hexafluoroisobutyric acid ester of cellulose

SOURCE: Tsellyuloza i yeye proizvodny*ye, sbornik statey (Cellulose and its derivatives).
Moscow, 1963, 55-59

TOPIC TAGS: polysaccharide, cellulose, cellulose ester, cellulose acetate, cellulose
hexafluoroisobutyrate, fluoridated cellulose ester

ABSTRACT: Results are given of attempts to accomplish the synthesis of this, as yet unknown, type of F-containing cellulose ester which may lead to valuable new technical materials, such as less hygroscopic and more heat-resistant oil-and water-repellent films, lacquers, etc. Bis-trifluoromethylketene, $(CF_3)_2C:C:O$, prepared at the Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Metalloorganic compounds) was explored as the esterifying agent in a series of 48-hour tests at 20 C in a heterogeneous dioxan medium, with and without a catalyst, but failed to produce yields higher than $\delta \approx 7$. A low-substituted cellulose ester was then synthesized for the first time with α -hydroperfluoroisobutyric acid, and a mixed cellulose ester was prepared with

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APPROVED FOR RELEASE: Tuesday, August 01, 2000

CIA-RDP86-00513R0014

acetic and α -hydroperfluoroisobutyric acids which contains up to 20% F. Increasing the F content in the molecule to 20% markedly reduced the hygroscopic properties of the ester and of films made from it, as well as the temperature of vitrification, and increased the elasticity of these cellulose derivatives. Quantitative data are given on the hygroscopic properties, swelling, and sedimentation of some cellulose esters. "The studies on the hygroscopicity and swelling of complex cellulose esters were carried out by T. Alishoyeva at NIKFI under the direction of K. K. Podgorodetskiy. The thermomechanical properties of the cellulose esters were determined in the laboratory of polymer physics of the Institute of Metalloorganic Compounds by K. A. By*chko and Ye. A. Markina. We would also like to thank I. L. Knunyants for his valuable advice." Orig. art. has: 2 tables and 1 graph.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Metallo-organic Compounds); Moskovskiy tekstil'ny*y institut (Moscow Textile Institute)

SUBMITTED: 29Jun62

DATE ACQ: 06Jan64

ENCL: 00

SUB CODE: CH

NO REF SOV: 000

OTHER: 000

Card 2/2

ACCESSION NR: AT4017413

S/ 0000/63/000/000/0094/0099

AUTHOR: Kryazhev, Yu. G.; Rogovin, Z. A.; Chernaya, V. V.

TITLE: Synthesis of new derivatives of cellulose and other polysaccharides.
XL. Preparation of a grafted cellulose-polymethylvinylpyridine copolymer without intermediary formation of a homopolymer

SOURCE: Tsellyuloza i yeye proizvodny*ye, sbornik statey (Cellulose and its derivatives). Moscow, 1963, 93-99

TOPIC TAGS: cellulose, polysaccharide, cellulose derivative, copolymer, grafted copolymer, cellulose copolymer, polymethylvinylpyridine

ABSTRACT: Grafted copolymers were synthesized from 2-methyl-5-vinylpyridine phosphate, chloride, sulfate, acetate, oxalate or citrate, their quaternary salts (prepared by reacting with dimethylsulfate) and cellulose which had been alkylated with 4- β -hydroxyethylsulfonyl-2-aminoanisole and subsequently diazotized in the presence of FeCl_2 , CuCl , Na_2S , $\text{K}_2\text{S}_2\text{O}_5$, $\text{Na}_2\text{S}_2\text{O}_4$, $\text{Na}_2\text{S}_2\text{O}_3$, Na_2SO_3 and CH_2O as the reducing agents, without intermediary formation of a homopolymer. The copolymers, depending on the particular vinylpyridine salt used, its concentration, the molar ratio between vinylpyridine and the acid used, and the particular reducing agent,

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ACCESSION NR: AT4017414

S/0000/63/000/000/0100/0106

AUTHORS: Arimova, R. M.; Yegorova, V. N.; Koslov, P. V.; Livshits, R. M.; Rogovin, Z. A.

TITLE: Chemical plasticizing of polymers. I. Chemical plasticizing of nitrocellulose by the implantation of polymethacrylate

SOURCE: Tsellyuloza i yeye proizvodny*ye, sbornik statey (Cellulose and its derivatives). Moscow, 1963, 100-106

TOPIC TAGS: plasticizing, plasticizing agent, polymer, copolymer, nitrocellulose, polymethacrylate, polymer thermomechanical property, polymer dynamometric property, nitrocellulose copolymer

ABSTRACT: Using $\text{Ce}(\text{NH}_4)_2(\text{NO}_3)_6$ as the oxidizing and nitrocellulose as the reducing agent, the authors prepared a series of grafted copolymers containing 7.15-95.0% nitrocellulose and 5.0-28.5% polymethacrylate; the maximal polymethacrylate content was obtained in 2 hours. These copolymers were then compared with corresponding mixtures of nitrocellulose and polymethacrylate homopolymers with respect to their thermomechanical and dynamometric properties. The results shown in Figs. 1 and 2 of the Enclosure indicate that the plasticizing effect resulting from the implanta-

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ACCESSION NR: AT4017414

tion of elastic polymer chains into the macromolecules of a rigid polymer is equal to that produced by physical addition of low-molecular-weight plasticizers. The only advantage of chemical plasticizing is the higher value of the modulus of elasticity in the copolymer. Orig. art. has: 2 tables and 4 graphs.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University); Moskovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 01Aug62

DATE ACQ: 06Jan64

ENCL: 01

SUB CODE: OC, MT

NO REF SOV: 008

OTHER: 003

Card 2/3

ACCESSION NR: AT4027414

ENCLOSURE: 01

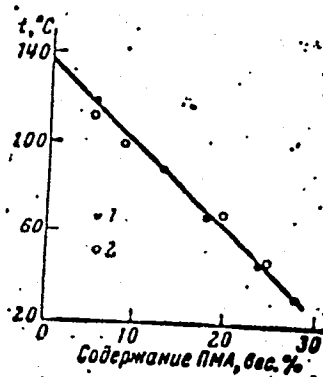


Fig. 1. Dependence of vitrification temperature on the polymethacrylate content (% by wt.):
1 - copolymers; 2 - mixtures

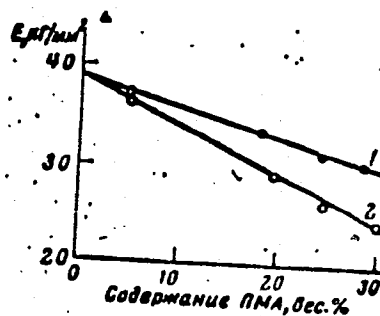


Fig. 2. Dependence of the modulus of elasticity (kg/mm²) on the polymethacrylate content (wt. %):
1 - copolymers; 2 - mixtures

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ACCESSION NR: AT4017415

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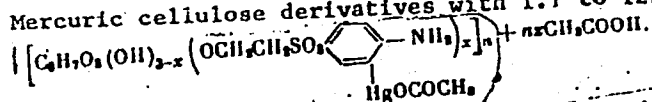
AUTHOR: Akovbyan, E. M.; Gal'braykh, L. S.; Rogovin, Z. A.

TITLE: Synthesis of new derivatives of cellulose and other polysaccharides.
XLI. Synthesis of mercury-containing cellulose derivatives

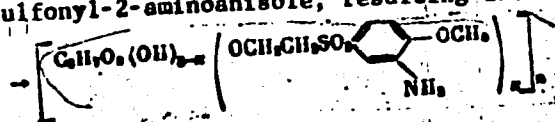
SOURCE: Tsellyuloza i yeye proizvodny*ye, sbornik statey (Cellulose and its derivatives). Moscow, 1963, 107-109

TOPIC TAGS: cellulose, polysaccharide, cellulose derivative, mercury cellulose, alkylcellulose, bactericidal activity

ABSTRACT: Mercuric cellulose derivatives with 1.1 to 12.3% Hg by weight were



prepared by the action of $(\text{CH}_3\text{COO})_2\text{Hg}$ on cellulose previously alkylated with 4- β -hydroxyethylsulfonyl-2-aminoanisole, resulting in:



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and 4-~~8~~ hydroxyethylsulfonylaniline, resulting in:



The % Hg in the product increases to a certain limit with the duration of the reaction and a rise in temperature up to 80C. The products have marked bactericidal activity. Orig. art. has: 2 tables and 3 chemical equations.

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 08Oct62

DATE ACQ: 06Jan64

ENCL: 00

SUB CODE: OC, LS

NO REF SOV: 006

OTHER: 002

2/2
Card

ACCESSION NR: AT4017416

S/0000/63/000/000/0150/0156 |

AUTHOR: Marupov, R.; Zhbankov, R. G.; Kryazhev, Yu. G.; Rogovin, Z. A.

TITLE: Infrared spectroscopic study of the structure of grafted copolymers of cellulose with poly-2-methyl-5-vinylpyridine

SOURCE: Tsellyuloza i yeye proizvodny*ye, sbornik statey (Cellulose and its derivatives). Moscow, 1963, 150-156

TOPIC TAGS: cellulose, cellulose copolymer, grafted copolymer, spectroscopy, infrared spectrum, poly-2-methyl-5-vinylpyridine

ABSTRACT: The authors compared the infrared spectra of cotton cellulose, 4- β -hydroxyethylsulfonyl-2-aminoanisol, cellulose alkylated with 4- β -hydroxyethylsulfonyl-2-aminoanisol, a homopolymer of 2-methyl-5-vinylpyridine and a series of grafted copolymers of the latter and cellulose in the 2600-3800 cm^{-1} (LiF), 700-2000 cm^{-1} (NaCl) and 400-700 cm^{-1} (KBr) bands. The copolymers were prepared by chain substitution and by the formulation of a macroradical via the dissociation of diazo groups presubstituted on a cellulose macromolecule. The infrared spectra were found to depend on the method of preparation and corroborated the existence of a chemical bond between the cellulose and the poly-2-methyl-5-vinylpyridine in

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ACCESSION NR: AT4017416

their copolymers. Orig. art. has: 6 graphs and 1 table.

ASSOCIATION: Institut fiziki AN BSSR (Institute of Physics, AN BSSR); Moskovskiy
tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 21Jan63

DATE ACQ: 06Jan64

ENCL: 00

SUB CODE: OC, MI

NO REF SOV: 006

OTHER: 005

Card 2/2

ACCESSION NR: AT4017417

S/0000/63/000/000/0186/0191

AUTHOR: Movsum-Zade, A. A.; Livshits, R. M.; Rogovin, Z. A.; Konkin, A. A.

TITLE: Synthesis of grafted copolymers of cellulose and polybutylacrylate.

SOURCE: Tsellyuloza i yeye proizvodny*ye, sbornik statey (Cellulose and its derivatives). Moscow, 1963, 186-191

TOPIC TAGS: cellulose, cellulose copolymer, grafted copolymer, polybutylacrylate, copolymerization, polymerization catalyst

ABSTRACT: $\text{Ce}(\text{NH}_4)_2(\text{NO}_3)_6$ was used as the catalyst, the quaternary ammonium salt of diethylaminomethyldodecyl ester (alkalon D) as the emulsifier and cotton cellulose, hydrated cellulose and butylacrylate as the materials in a synthesis of grafted polymers which, depending on the emulsifier concentration, Ce^{4+} concentration, pH of the medium and temperature, yielded products containing 51-94% cellulose and 6-48% polybutylacrylate. The butylacrylate polymerization rate and the proportion of polybutylacrylate in the polymer were found to rise as the emulsifier concentration increased up to 0.20 g/100 ml. A decrease in temperature from 35 to 10C markedly depressed the formation of the homopolymer without affecting the grafted polymerization rate, while both the rate of polymerization and

Card 1/2

ACCESSION NR: AT4017417

that of grafting decreased with the pH in tests with 0.05 - 1 mol/liter HNO_3 in the reaction medium. Orig. art. has: 4 tables and 2 graphs.

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 21Feb63

DATE ACQ: 06Jan64

ENCL: 00

SUB CODE: OC, MT

NO REF SOV: 003

OTHER: 006

Card 2/2

VIRNIK, A.D.; MAKHKAMOV, K.; ROGOVIN, Z.A.

Development of methods for increasing the lightfastness and
thermal stability of cellulose materials. Khim.volok. no.1:
47-50 '63. (MIRA 16:2)

1. Moskovskiy tekstil'nyy institut.
(Rayon) (Cellulose)

DRUZHININA, T.V.; ANDRICHENKO, Yu.D.; KONKIN, A.A.; ROGOVIN, Z.A.

Fibers ~~manufactured~~ from ethylene and propylene copolymers.
Khim. volok. no.3:15-18 '63. (MIRA 16:7)

1. Moskovskiy tekstil'nyy institut.
(Textile fibers, Synthetic)
(Ethylene polymers)

L 17482-63 EWP(j)/EPF(c)/EWI(m)/BDS ASD Pc-4/Pr-4 RM/WW
S/0183/63/000/004/0012/0014

ACCESSION NR: AP3004758

AUTHORS: Kol'k, A. R.; Konkin, A. A.; Rogovin, Z. A.

TITLE: Synthesis of acrylonitrile and metacrolein copolymers

SOURCE: Khimicheskiye volokna, no. 4, 1963, 12-14

TOPIC TAGS: copolymerization, acrylonitrile, metacrolein,
nitrogen, Kjeldahl method, N

ABSTRACT: Authors studied the process of copolymerization of acrylonitrile with metacrolein copolymer. The reaction was carried out in an aqueous solution in the presence of an oxidation-reduction system and it was intended for the preparation of a new acrylonitrile copolymer which contains aldehyde groups capable of reacting. The copolymerization constants of acrylonitrile with metacrolein have been determined. It was shown that, in the copolymerization of the above monomers, acrylonitrile is less reactive than metacrolein. The composition of the copolymer was determined by its nitrogen content by the Kjeldahl

Card 1/2

L 17482-63

ACCESSION NR: AP3004758

method. Preliminary data show that the copolymer contains
5 to 8% metacrolein. Orig. art. has: 2-figures and 2 tables.

ASSOCIATION: MTI (Moscow technical institute)

SUBMITTED: 22Nov62

DATE ACQ: 20Aug63

ENCL: 00

SUB CODE: CH

NO REF SOV: 003

OTHER: 006

Card

2/2

LIFSHITS, R.M.; TOKAR', Ye.G.; DOMITEYEVA, I.A.; ROGOVIN, Z.A.

Investigating the possibility of modifying the properties of fabrics made from rayon staple fibers by means of polyacrylonitrile grafting. Izv. vys. ucheb. zav.; tekhn. tekst. prom. no.4:95-98 '63. (MIRA 16:11)

1. Moskovskiy tekstil'nyy institut i Tsentral'nyy nauchno-issledovatel'skiy institut shersti.

GABRIYEL'YAN, G.A.; ROGOVIN, Z.A.

Synthesis of a copolymer of acrylonitrile and diketone. Khim.
volok. no.5:2-5 '63. (MIRA 16:10)

1. Moskovskiy tekstil'nyy institut.

U ZHUN-ZHUY [Wu Jung-jui]; STASYUK, Kh.A.; KOCHERGINSKAYA, L.A.;
ROZENBLYUM, N.D.; KONKIN, A.A.; ROGOVIN, Z.A.

Radiation grafting of vinyl monomers to polyolefin fibers. Khim.
volok. no.5:12-15 '63. (MIRA 16:10)

1. Moskovskiy tekstil'nyy institut.

GABRIYEL'YAN, G.A.; ROGOVIN, Z.A.

Chemical transformations of an acrylonitrile copolymer with diketene.
(MIRA 17:1)
Khim.volok no.6:2-5 '63.

1. Moskovskiy tekstil'nyy institut.

LIVSHITS, R.M.; ROGOVIN, Z.A.

Synthesis of graft cellulose copolymers with carbochain polymers in the presence of trivalent manganese pyrophosphate. Khim.volok no.6: 38-40 '63. (MIRA 17:1)

1. Moskovskiy tekstil'nyy institut.

MAKHKAMOV, K.; PENEZHIK, M.A.; VIRNIK, A.D.; ROGOVIN, Z.A.

Development of methods to increase the light-fastness of
cotton and acetate-cellulose fabrics. Izv.vys.ucheb. zav.
tekh. tekst. prom. no.6:112-117 '63 (MIRA 17:8)

1. Moskovskiy tekstil'nyy institut.

SUN' TUN, [Sun T'ung]; LI ZHUY [Li Jui]; ROGOVIN, Z.A.

Synthesis of new derivatives of cellulose. Part 24: Synthesis
of graft copolymer of cellulose with polyacrylonitrile and
study of its properties. Vysokom.soed. 5 no.1:18-23 Ja '63.
(MIRA 16:1)

1. Moskovskiy tekstil'nyy institut. (Cellulose) (Acrylonitrile) (Polymers)

POLYAKOV, A.I.; ROGOVIN, Z.A.; DEREVITSKAYA, V.A.

On the possibility of preparing unsaturated derivatives of cellulose by the Chugaev reaction. Part 2. Vysokom.soed. 5 no.2:161-163
F '63. (MIRA 16:2)

1. Moskovskiy tekstil'nyy institut.
(Cellulose xanthates) (Unsaturated compounds)

ROGOVIN, Z. A.

AID Nr. 980-16 31 May

FIRE-RESISTANT DERIVATIVES OF CELLULOSE (USSR)

Rogovin, Z. A., Wu Mei-yen, M. A. Tyuganova, T. Ya. Zharova, and Ye. L. Gefer. Vysokomolekulyarnyye soyedineniya, v. 5, no. 4, Apr 1963, 506-511. S/190/63/005/004/005/020

The influence of the structure of organophosphorus acids on the fire resistance of cellulose partially esterified by these acids has been studied at the Moscow Textile Institute. The experiments were conducted with cellulose esters of methyl-, ethyl-, or phenylphosphonic acids or phenyl dihydrogen phosphate with various degrees of esterification. These esters were synthesized for the first time by treating cellulose fabric with 4% solutions of the acid dichloride in absolute pyridine for 1 hr. The phosphorus content was

Card 1/2

AID Nr. 980-16 31 May

FIRE-RESISTANT DERIVATIVES [Cont'd]

8/190/63/005/004/005/020

controlled by varying the reaction temperature from 20 to 130°C. The fire resistance was evaluated from the weight loss after combustion and by the method of A. Wilson, O. J. Reeves, and M. Millan. It was shown that the fire resistance of cellulose derivatives 1) increases with an increase of the degree of esterification, 2) drops with an increase of the size of the alkyl radical, 3) is higher for the phosphonic (C-P bond) than for the phosphoric (C-O-P bond) acid derivatives, and 4) drops when an alkyl radical is replaced by an aryl radical. Highly fire-resistant cellulose fabrics were prepared by reacting the cellulose molecule with comparatively small amounts of methyl- or ethylphosphonic acids which correspond to a P-content of the ester of 2.08 and 4.09, respectively.

[BAO]

Card 2/2

FEDOROVA, A.F.; ROGOVIN, Z.A.

Relative reactivity of hydroxyl groups of cellulose macromolecules
in esterification reactions in an acid medium. Vysokom.soed. 5
no.4:519-523 Ap '63. (MIRA 16:5)

1. Moskovskiy tekstil'nyy institut.
(Cellulose) (Esterification) (Hydroxyl group)

ROGOVIN, Z.A.; POLYAKOV, A.I.

Synthesis of stereoisomeric derivatives of cellulose. Vysokom.sped.
5 no.4:629 Ap '63. (MIRA 16:5)

(Cellulose) (Isomers)

GAL'BRAYKH, L.S.; ROGOVIN, Z.A.

Synthesis of new derivatives of cellulose and other polysaccharides.
Part 26. Vysokom.soed. 5 no.5:693-699 My '63. (MIRA 17:3)

1. Moskovskiy tekstil'nyy institut.

U MEY-YAN' [Wu Mei-yen]; ROGOVIN, Z.A.

Synthesis of new derivatives of cellulose and other polysaccharides.
Part 27. Vysokom.soed. 5 no.5:706-711 My '63. (MIRA 17:3)

1. Moskovskiy tekstil'nyy institut.

MURCHOVA, R.S.; STREPIKHEV, A.A. [deceased]; RUGOVII, S.A.

Polymerization of N-substituted lactams. Vysokom. speed. 5 no. 7:
1096-1100 J1 '63. (HRA 16:9)

1. Moskovskiy tekstil'nyy institut.
(Lactams) (Polymerization)

ZHBANKOV, R.G.; MARUPOV, R.; U MEY-YAN'; TYUGANOVA, M.A.; ROGOVIN, Z.A.

Structure of cellulose esters with phosphorus-containing acids studied by
infrared spectroscopy. Vysokom.soed. 5 no.9:1292-1296 S '63.
(MIRA 17:1)

1. Institut fiziki AN BSSR i Moskovskiy tekstil'nyy institut.

L 18183-63

EWP(j)/EWT(m)/BDS AFFTC/ASD/SSD Pc-4 RM/MAY

ACCESSION NR: AP3006768

S/0190/63/005/009/1422/1424 6/4

AUTHOR: Gil'man, I. S.; Rogovin, Z. A.; Aksenova, T. A. 6/7

TITLE: Study of the degradation of fluorine-containing polymers by the osmotic method 7

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 9, 1963, 1422-1424

TOPIC TAGS: degradation, polymer degradation, Ftorlon, ethylene polymers, ethylene. chlorotrifluoro-. polymers, Ftorlon degradation, Ftorlon dioxane solution, osmometer, osmotic method, Ftorlon acetone solution, low molecular fraction, low molecular fraction quantitative determination, quantitative determination, low molecular fraction separation, separation, osmotic pressure, initial concentration, equilibrium concentration, intrinsic viscosity, initial intrinsic viscosity, equilibrium intrinsic viscosity, polymer degradation rate, degradation rate

Card 1/53

L 18183-63
ACCESSION NR: AP3006768

ABSTRACT: An osmotic method has been used to study the oxidative degradation of Ftorlon (copolymer of polychlorotrifluoroethylene and high-pressure polyethylene); by this method it is possible to determine quantitatively the low-molecular fraction (molecular weights 20,000—25,000) formed during degradation and to separate it from the bulk of the polymer. Degradation was achieved by heating a dioxane solution of the polymer at 65C in air for 40 hr with vigorous agitation. The oxidized polymer was precipitated by addition of water and dried in vacuum at 60C. Experiments were conducted with acetone solutions of oxidized Ftorlon (I) and initial Ftorlon (II), on an osmometer described previously (I. S. Gil'man, Z. A. Rogovin, Vy*sokomolek. soyed., 1, 619, 1959). The time required for a difference in levels (Δh) of 10 cm on the two sides of the semipermeable membrane to drop to zero was found to be 9—10 hr for pure acetone. The lowest molecular weight of species which did not diffuse through the membrane and could therefore be determined under the conditions of the experiment was

Card 2/5

L 18183-63

ACCESSION NR: AP3006768

20,000—25,000. The results of osmotic pressure measurements for solutions of I and of II of the same concentration are given in plots of Δh versus time (Fig. 1 of the Enclosure). The maximum on the curve for I indicates that during equilibration the concentration of the initial solution changes owing to diffusion through the membrane of the low-molecular (less than 20,000—25,000) fraction produced by degradation. The number-average molecular weight of the fraction remaining in the initial solution was determined conventionally. The diffusion of degradation products through the membrane was confirmed by the fact that 1) while the concentration of II remained almost unchanged after equilibration, the equilibrium concentration of I was 20—30% below its initial concentration, and 2) while the intrinsic viscosity of II in acetone remained unchanged after the osmotic pressure measurement, the intrinsic viscosity of I increased from 1.90 to 2.60 dl/g after diffusion of the low-molecular fraction through the membrane. It is concluded that the osmotic method can be used for studying the degradation rate of polymers in solutions. Orig. art. has: 2 figures and 1 table.

Card 3/5 ASSN: MOSCOW TEXTILE INSTITUTE

S/063/63/008/001/001/001
A057/A126

AUTHORS: Kryazhev, Yu. G., Rogovin, Z. A.

TITLE: Synthesis of grafted copolymers of acrylonitrile with 2-methyl-5-vinylpyridine

PERIODICAL: Zhurnal vsesoyuznogo khimicheskogo obshchestva imeni D. I. Mendeleeva, v. 8, no. 1, 1963, 118 - 119

TEXT: The synthesis of grafted copolymers of polyacrylonitrile was developed without simultaneous formation of homopolymers. The authors reported on the new synthesis of block copolymers of acrylonitrile in an earlier paper (Vysokomol. soyed., v. 4, no. 5, 1962, 783). The present method is based on the fact that the oxidation of aromatic amines and the reduction of aromatic diazo-compounds occurs frequently with formation of free radicals which are able to initiate polymerization of vinyl monomers. Aromatic aminogroups were introduced into the polyacrylonitrile and poly-2-methyl-5-vinylpyridine by copolymerization of the corresponding monomer with 4-vinylsulfonyl-2-aminoanisole (BCA /VSA). Thus two grafted copolymers of acrylonitrile (AH/AN) and 2-methyl-5-vinylpyridine

Card 1/3

Synthesis of grafted copolymers of...

S/063/63/008/001/001/001
A057/A126

VSA was synthesized from the sulfate ester of 4- β -hydroxyethylsulfonyl-2-aminoanisole and dissolved in AN and MVP. The block-copolymerization was carried out at 60°C in the presence of azodinitrile isobutyrate as initiator during 10 hrs. The subsequent diazotization of the aromatic aminogroups of the obtained copolymers was carried out with an aqueous solution containing 0.5% NaNO₃ and 0.5% HCl at 0 + 5°C during 20 min. Afterwards the polymer was washed and added to the solution of the corresponding monomer (25% solution of MVP in acetic acid or 7% solution of AN in water, respectively) containing the calculated quantity of FeSO₄·7H₂O. The mixture was held for 3 hrs at 60°C. No homopolymers could be separated from the grafted copolymers obtained. The latter are soluble in dimethylformamide. There are 2 tables.

ASSOCIATION: Moskovskiy tekstilnyy institut (Moscow Institute of Textiles)

SUBMITTED: June 10, 1962

Card 3/3

ROGOVIN, Zakhar Aleksandrovich

"Synthesis of new derivatives of cellulose and other polysaccharides".

report submitted for the International Symposium on the Chemistry of Carbohydrates,
Muenster, West Germany, 13-17 Jul 64

ROGOVIN, Zakhar Aleksandrovich; GERSHMAN, B.G., red.

[Fundamentals of the chemistry and production technology
of synthetic fibers] Osnovy khimii i tekhnologii proizvod-
stva khimicheskikh volokon. Izd.3., perer. i dop. Mo-
skva, Khimiia, 1964. 2 p. (MIRA 17:11)

L 45815-65 EWT(m)/EWP(j)/T Pc-4 SSD RM
ACCESSION NR AM003776 BOOK EXPLOITATION

Rogovin, Zakhar Aleksandrovich

Principles of chemistry and technology in the production of chemical fibers.
v. 2: Production of synthetic fibers (Osnovy khimii i tekhnologii
proizvodstva khimicheskikh volokon. t. 2: Proizvodstvo sinteticheskikh
volokon), 3d ed., rev. and enl., Moscow, [Izd-vo "Khimiya"], 1964, 291 p.
illus., biblio., index. Errata slip inserted. 15,000 copies printed.

TOPIC TAGS: synthetic fiber, chemical engineering, polyamide, polyester,
polyurethane, polyacrylonitrile, polyvinylchloride, polyolefin, fluoracarbon
polymer

PURPOSE AND COVERAGE: This book, consisting of two volumes, presents the
chemical principles and the production technology of chemical fibers (artificial
and synthetic). The first volume deals with the general principles and

s/ 26
24
BLI

Card 1/2

L 45815-65

ACCESSION NR AM5003776

raw material and reprocessing artificial and synthetic fibers.

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Ch. IV. Production of polyacrylonitrile fibers	169
Ch. V. Production of polyvinylchloride fibers	208
Ch. VI. Production of polyvinyl alcohol fibers	232
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SUBMITTED: 04 Sep 64

SUB CODE: MF, CC

NO REF SOV: 179

OTHER: 146

Card 2/2

L 45813-65 EWT(m)/EWP(j)/T Pa-4 RM
ACCESSION NR AM5003775 BOOK EXPLOITATION

S/ 17
16
B41

Rogovin, Zakhar Aleksandrovich

Principles of chemistry and technology in the production of chemical fibers.
v. 1: General principles and methods in the production of chemical fibers;
production of artificial fibers (Osnovy khimii i tekhnologii proizvodstva
khimicheskikh volokon. t. 1: Obshchiye printsipy i metody proizvodstva
khimicheskikh volokon; proizvodstvo iskusstvennykh volokon), 3d ed., rev.
and enl., Moscow, [Izd-vo "Khimiya"], 1964, 644 p. illus., biblio., index.
15,000 copies printed.

TOPIC TAGS: synthetic fiber, cellulose, viscose, acetate

PURPOSE AND COVERAGE: This book, consisting of two volumes, presents the
chemical principles and the production technology of chemical fibers (artificial
and synthetic). The first volume deals with the general principles and
methods of obtaining chemical fibers of all types and the chemical principles
and production technology of artificial fibers. The second volume presents the
chemical principles and production technology of synthetic fibers. The book
is intended as a text for students in higher technical education institutions.
It can be useful to a broad audience of researchers and engineers of research

Card 1/3

I 45813-65
ACCESSION NR AM5003775

institutes, chemical fiber plants, and other branches of the economy producing raw material and reprocessing artificial and synthetic fibers.

TABLE OF CONTENTS [abridged]:

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L 45813-65

ACCESSION NR AM5003775

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Ch. XI. Forming viscose fiber -- 380
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SUBMITTED: 30Jul64

SUB CODE: MT, CC

NO REF SOV: 224

OTHER: 184

Card 3/3

ACCESSION NR: AP4027714

S/0183/64/000/002/0027/0030

AUTHOR: Sergeyeva, L. M.; Rogovin, Z.A.

TITLE: Synthesis of modified polyvinyl alcohol fibers with ion exchange properties

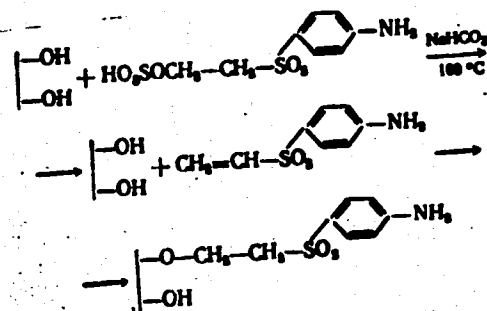
SOURCE: Khimicheskiye volokna, no. 2, 1964, 27-30

TOPIC TAGS: Polyvinyl alcohol fiber, ion exchange, synthesis, modified polyvinyl alcohol, amine modified polyvinyl alcohol, macroradical formation, graft copolymer, polyvinyl alcohol polymethacrylic acid copolymer, polyvinyl alcohol polymethylvinylpyridine copolymer, ion exchange fabric, stability, swelling, exchange process rate, cation exchange fiber, anion exchange fiber

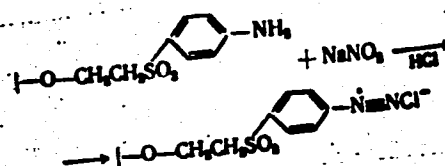
ABSTRACT: The possibility was investigated of preparing modified polyvinyl alcohol (PVA) fibers and cloth with a high ion exchange capacity by a method developed at the Moscow Textile Institute Laboratory for the synthesis of cellulose copolymers (Z. A. Rogovin, Sun T'un, N. D. Khvostenko, A. D. Virnik, Vy'sokomol. soyed., 4, 4, 571 (1962)). In this, aromatic aminogroups are introduced into the macro-molecules of the original polymer:

Card^{1/4}

ACCESSION NR: AP4027714



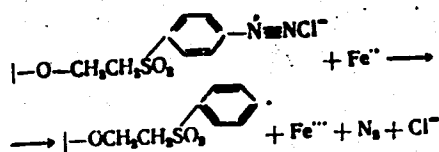
diazotized:



Card 2/4

ACCESSION NR: AP4027714

and the diazo group decomposed in the presence of Fe^{+2} , forming macroradicals:



Methacrylic acid is then grafted onto this polyvinyl fiber containing aromatic amine cross-linkages between the macromolecules (about 1 amino group for 10-15 elementary macromolecule segments). An aqueous solution of methacrylic acid in which FeSO_4 is dissolved is contacted with PVA. By reacting for 2 hours at 80-100C, and using 20-30% monomer in the solution, 140-150 wt.% of polymethacrylic acid may be grafted onto the PVA fiber. This corresponds to an ion exchange capacity of 8.2-9.5 mg.equivs/gm. The ion exchange capacity depends on the pH of the medium, and the process is completed in 10 min. The modified PVA cation exchange fabric is stable in 2N acid or alkali solutions at 20-100C. An attempt similarly to prepare a graft copolymer of PVA with 2,5-dimethylvinylpyridine resulted in a polymethylvinylpyridine-modified PVA fiber whose anion exchange capacity was no more than 2 mg.equivs/gm. The exchange process with this material

Card 3/4

ACCESSION NR: AP4027714

also required only 8-10 min.; the degree of swelling in water at 80C was 210%.
"The experimental work was conducted with the participation of L. Komal'dniyets.
Orig. art. has: 2 tables, 4 figures and 3 equations.

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 24Sep62

DATE ACQ: 22Apr64

ENCL: 00

SUB CODE: MA, CH

No. REF. SOV: 006

OTHER: 000

Card 1/1

LIVSHITS, R.M.; FROLOVA, A.A.; KOZLOV, P.V.; ROGOVIN, Z.A.

Thermoplastic graft copolymers of cellulose. Vysokom.
soed. 6 no.3:572 Mr'64. (MIRA 17:5)

ACCESSION NR: AP4032568

S/0190/64/006/004/0672/0676

AUTHORS: Kryazhev, Yu. G.; Rogovin, Z. A.

TITLE: Synthesis of block copolymers of 2-methyl-5-vinylpyridine

SOURCE: Vy*sokomolek. soyedin., v. 6, no. 4, 1964, 672-676

TOPIC TAGS: polymer, polymerization, alkylvinylpyridine, vinyl pyridine, diazonium salt, acrylonitrile, methacrylic acid, styrene, copolymerization, homopolymer formation

ABSTRACT: Block-copolymerization of 2-methyl-5-vinylpyridine (MVP) with acrylonitrile, methacrylic acid, and styrene was conducted by the authors' method (Vy*sokomolek. soyed., 4, 783, 1962). The first step consisted of polymerizing MVP (initiated by a diazonium salt of p-aminoacetanilide) in order to obtain a Poly-MVP with terminal aromatic aminogroups. The average molecular weight of the Poly-MVP, determined from the content of the aromatic terminal groups was 16,500, as against 8,000 obtained by the viscosimetric technique. In the synthesis of the block-copolymer with acrylonitrile (AN), the Poly-MVP was dissolved in a 7% aqueous solution of AN. The reaction was conducted at 60C (for 1 hour) in the

Card 1/2

ACCESSION NR: AP4032568

presence of 0.5% iron sulfate. Two fractions of the copolymer were obtained, one insoluble in 30% acetic acid and alcohol, and the other one soluble in both. The next copolymer was synthesized by dissolving Poly-MVP in a 30% aqueous solution of methacrylic acid (MA) under identical conditions. A copolymer composed of 28% Poly-MVP and 72% Poly-MA proved soluble in 98% acetic-acid, 0.1 normal NaOH, and HCl. It was insoluble in alcohol and benzol. The copolymerization of Poly-MVP and styrene was conducted for 4 hours under similar conditions in the presence of 3% of the OS-20 emulsifier. A copolymer consisting of 33% Poly-MVP and 67% styrene was isolated. M. Ya. Rolev participated in the experimental work. Orig. art. has: 3 tables.

ASSOCIATION: Moscovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 25Apr63

DATE ACQ: 11May64

ENCL: 00

SUB CODE: GC

NO REF SOV: 002

OTHER: 001

Card 2/2

ACCESSION NR: AP4037270

S/0190/64/006/005/0769/0770

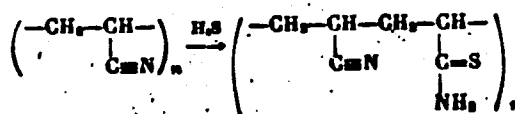
AUTHORS: Gabriyelyan, G. A.; Rogovin, Z. A.

TITLE: Synthesis of thionide containing polymer analogs of polyacrylonitrile

SOURCE: Vyssokomolekulyarnyye soedineniya, v. 6, no. 5, 1964, 769-770

TOPIC TAGS: polyacrylonitrile, polyacrylonitrile polymer analog, acrylonitrile diketone copolymer, polyacrylonitrile hydrogen sulfide reaction, polyacrylonitrile thionide group, acrylonitrile diketone thioamide group

ABSTRACT: The synthesis of a new polymer analog has been achieved by the interaction of polyacrylonitrile with hydrogen sulfide according to the scheme

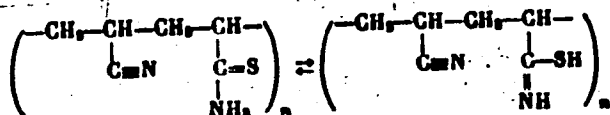


The formation of thioamides was confirmed by the presence in infrared spectra of

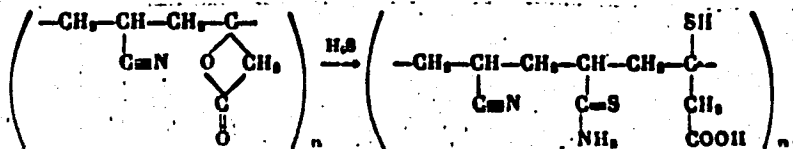
Card 1/3

ACCESSION NR: AP4037270

an absorption band at 1624 cm^{-1} . The thioamide is in a state of tautomeric equilibrium with the thiol form



The presence of thiol groups was confirmed by their reaction with an aqueous iodine solution. In another experiment, a 5% solution of acrylonitrile-diketene copolymer was acted upon with hydrogen sulfide. This resulted in the formation of a copolymer containing thioamide and sulfhydryl group as shown by



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ACCESSION NR: AP4037270

It was found that at 50C about 50% of the nitrile groups are converted into thioamide or thiol groups in a period of 1 to 2 hours. The modified polyacrylonitrile and the acrylonitrile-diketone copolymers are soluble in acetone. Thanks are expressed to Yu. N. Shenker for the analysis of infrared spectra. Orig. art. has: 1 graph and 3 formulas.

ASSOCIATION: Moscovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 26Nov62

DATE ACQ: 09Jun64

ENCL: 00

SUB CODE: MT

NO REF SOV: 001

OTHER: 003

Card 3/3

SHARKOVA, Ye.M., VIRNIK, A.D.; ROGOVIN, L.A.; Primeneniya uchastiyet
SHIVAROVA, K.K.

Polymer analog conversions of a graft copolymer of cellulose
and polyglycidyl methacrylate. Vysokom.soud. 6 no. 5:951-956
M, 1964. (MIRA 17:6)

1. Moskovskiy tekstil'nyy institut.

KHCELIMURADOV, N.; KOZLOVA, Yu.S.; POLYAKOV, A.I.; ROGOVIN, Z.A.

possibility of preparing nitrodeoxycellulose by nucleophilic
substitution. Vysokom. soed. 6 no. 5:963 Py '64. (MIRA 17:6)

MOVSUM-ZADE, A.A.; GORYAINOVA, Ye.S.; LIVSHITS, R.M.; ROGOVIN, Z.A.;
KONKIN, A.A.

Chemical plasticization of cellulose triacetates by grafting on
polymethyl methacrylate. Vysokom. soed. 6 no.7:1340-1345 J1 '64
(MIRA 18:2)

1. Moskovskiy tekstil'nyy institut.

MACAIDOVA, G.S.; KRYAZHEV, Yu.G.; ROGOVIN, Z.A.

Synthesis of triple $C\equiv C$ bond containing graft copolymers of cellulose.
Vysokom.sped. 6 no.8:1540 Ag '64. (MIRA 17:10)

L 11358-65 - EWT(m)/EPF(c)/EPR/T/EWP(J) PC-4/P-4/P-4 RPL - WW/RM
 8/0190/64/006/009/1624/1628
 ACCESSION NR: AP4045428

AUTHOR: Livshits, R. M.; Levites, L. M.; Rogovin, Z. A.

TITLE: Synthesis of modified-cellulose graft copolymers with the aid of pentavalent vanadium compounds. III. The effect of initiation conditions on the polymerization coefficient and the number of grafted chains B

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 9, 1964, 1624-1628

TOPIC TAGS: copolymer, graft copolymer, cellulose ester copolymer, vanadium oxide initiator, polymerization initiation, polymerization coefficient, alkylcellulose, polymethacrylate

ABSTRACT: The authors reacted cellulose with 4- β -hydroxyethylsulfonyl-2-aminoanisoie in order to obtain a modified cellulose fabric which was then used as the raw material in a redox copolymerization reaction with polymethacrylate, initiated by a solution of HVO_3 in H_2SO_4 . The purpose of the present study was to determine the polymerization coefficient of the cellulose-polymethacrylate graft copolymer, the amount of grafted monomer and the number of grafted chains as a function of the monomer concentration (0.260, 0.332 and 0.440 M), the duration (30--90 minutes) and temperature (50--70C) of the reaction, and the concentration of HVO_3 ($10.18\text{--}76.36 \times 10^{-3} \text{ M}$) in H_2SO_4 (1.2--2.0 M). The tabulated

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L 11358-65

ACCESSION NR: AP4045428

results show that the molecular weight of the grafted chains increased with a decrease in temperature and monomer concentration, reaching a maximum of 3000×10^3 at 10.18×10^3 M HVO_3 , 0.440 M methacrylate and 60C, decreased with an increase in HVO_3 and H_2SO_4 concentrations, and was unaffected by the duration of the reaction. The number of grafted chains, however, increased as the reaction was prolonged, reaching a maximum of 0.268 per 1000 elementary members in a 90 min. reaction at 60C with 0.44 M methacrylate, 2.0 M H_2SO_4 , and 38.18×10^{-3} M HVO_3 . The molecular weight of the grafted polymethacrylate was determined viscosimetrically from a diagram (viscosity in acetone after esterification vs. molecular weight prepared by the authors. Orig. art. has: 5 tables and 1 figure.

ASSOCIATION: Moskovskiy tekstil'ny'y institut (Moscow Textile Institute)

SUBMITTED: 22Oct63

ENCL: 00

SUB CODE: OC

NO REF SOV: 008

OTHER: 002

Card 2/2

L 64544-65 EWT(m)/EPF(c)/T/EWP(j) RPL. WW/RM

ACCESSION NR: AP5023219

UR/0190/01/006/011/1965/1968

AUTHOR: Kozlov, P. V.; Movsum-Zade, A. A.; Konkin, A. A.; Rogovin, Z. A.; Ivenkova, N. A.; Frolova, A. A.; Livshits, R. M.

TITLE: Plasticizing cellulose triacetate by grafting polymethylacrylate

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 11, 1964, 1965-1968

TOPIC TAGS: chain polymer, copolymerization, plasticizer, cellulose, thermomechanical property, graft copolymer

ABSTRACT: The article describes a study of plasticizing a rigid-chain polymer by grafting copolymerization with a flexible-chain polymer, exhibiting limited compatibility with it. Grafted copolymers of cellulose triacetate and polymethylacrylate were prepared by acetylation of synthesized graft copolymers of cellulose with polymethylacrylate. The thermomechanical properties (deformation, vitrification point) of the graft copolymers and mechanical mixtures of cellulose triacetate with polymethylacrylate were investigated. Plasticizing by graft copolymerization was found to occur on the molecular level, while in the case of mechanical mixtures, a mechanical structuring mechanism was observed. Orig. art. has: 3 graphs, 1 table.

Card 1/2

L 64544-65

ACCESSION NR: AP5023219

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute);
Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University) 44, 55

SUBMITTED: 06 Jan 64

ENCL: 00

SUB CODE: OC, CC

NR REF SOV: 004

OTHER: 000

JPRS

mlt
Card 2/2

L 64545-65 EWT(m)/EPF(c)/EWP(j)/T/EWA(c) RPL WW/RM
ACCESSION NR: AP5023220 4455 UR/0190/64/006/011/1980/1986
AUTHOR: Korotkova, A. Ya.; Kryazhev, Yu. G.; Rogovin, Z. A. 4455 35
TITLE: Synthesis of graft copolymers of cellulose containing aldehyde groups 32
SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 11, 1964, 1980-1986
TOPIC TAGS: aldehyde, macromolecule, cellulose, graft copolymer, copolymerization, chemical reaction
ABSTRACT: The article represents the 156th communication from the series "Investigation of the Structure and Properties of Cellulose and Its Derivatives." The possibility of introducing aldehyde groups into the macromolecule of modified cellulose by synthesis of graft copolymers of cellulose with poly-alpha-methylacrolein and poly-2-methyl-5-vinyl-N-ethanalpyridinium chloride was investigated. The graft copolymer of cellulose with poly-alpha-methylacrolein was synthesized for the first time by free radical graft copolymerization. It was shown that graft copolymerization takes place both at the C=C double bond and at the aldehyde group. Addition of the alpha-methylacrolein molecule to the diazo group is also possible. The graft copolymer of cellulose and poly-2-methyl-5-vinyl-N-ethanal-pyridinium chloride was synthesized by the
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L 64545-65

ACCESSION NR: AP5023220

addition of monochloroacetaldehyde to the graft copolymer of cellulose and poly-2-methyl-5-vinyl-pyridine. The influence of temperature and the monochloroacetaldehyde concentration on the amount of monochloroacetaldehyde added was studied. The graft copolymers were used for the production of cellulose derivatives possessing ion exchange properties. Sodium bisulfite was added to the C=C double bonds of the grafted poly-alpha-methylacrolein. The product obtained contained up to 7.87% SO₃H and possessed a cation exchange capacity of 0.9 mg-equiv/g with respect to 0.1 N NaOH. The aldehyde groups in graft poly-2-methyl-5-vinyl-N-ethanalpyridinium chloride were oxidized to carboxyls to obtain a modified cellulose possessing amphoteric properties. The product, containing 5% carboxyl groups, exhibited a cation exchange capacity of 1.1 mg-equiv/g and an anion exchange capacity of 1.5 mg-equiv/g.

Orig. art. has: 7 formulas, 3 tables, 1 graph.

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute) 44.55

SUBMITTED: 09 Jan 64

ENCL: 00

SUB CODE: CC, CC

NR FEF 30V: 004

OTHER: 003

JPRS

Card 2/2 *ml*

LIVSHITS, P.M.; FROLOVA, A.A.; KOZLOV, P.V.; ROGOVIN, Z.I.

Plasticization of cellulose by grafting in polymethyl and
polybutyl acrylate. Vysokom. soed. 6 no.11:1992-1996 N 164
(MIRA 18:2)

L. Moskovskiy tekstil'nyy institut i Moskovskiy gosudarstvennyy
universitet imeni Lomonosova.

GULINA, A.A.; MARUPOV, R.; ZHBANKOV, R.G.; KRYAZHEV, Yu.G.; ROGOVIN, Z.A.

Study of the structure of cellulose-polystyrene copolymer by
infrared spectroscopy. Vysokom. soed. 6 no.11:1997-2001 v. 16;
(MIRA 18:2)

1. Moskovskiy tekstil'nyy institut i Institut fiziki AN BSSR.

ROGOVIN, Z.A., prof.

New methods for modifying cellulose properties. Magy textil
16 no.12:551-555 D '64.

MAKHANOV, K., aspirant; PENEZHNIK, H.A., laborant; VIRNIK, A.D.,
starchiy nauchnyy sotrudnik; ROGOVIN, Z.A.

Investigating the resistance to heat and fading of the polymers of cellulose. Tekst. prom. 24 no.5:62-66 My'64

(MIRA 18:2)

1. Institut khimii AN Tadzhikskoy SSR (for Makhkanov). 2. Kompleksnaya nauchnaya laboratoriya kafedry khimicheskikh volokon Moskovskogo tekstil'nogo instituta (for Penezhnik).
3. Moskovskiy tekstil'nyy institut (for Virnik). 4. Zaveduyushchiy kafedroy khimicheskikh volokon Moskovskogo tekstil'nogo instituta (for Rogovin).

L 62712-65 EPF(c)/ENP(j)/EWP(m)/T --Ps-L/Pr-L RM
ACCESSION NR: AP5021702 UR/0074/64/033/009/1051/1060 40
AUTHOR: ^{44,55}Khomyakov, K. P.; ^{44,55}Virnik, A. D.; ^{44,55}Rogovin, Z. A. 37
TITLE: Prolonging action of medicinal preparations by combining them with polymers 7, 44
or adding them to polymers
SOURCE: Uspekhi khimii, v. 33, no. 9, 1964, 1051-1060
TOPIC TAGS: polymer, drug treatment, drug 55
Abstract: To prolong the action of medicinal preparations the following procedures can be used: 1) introduce various substituents into the medicinal molecule, to retard excretion of the preparation from the organism; 2) use complexes or salts of medicinal preparations with low-molecular compounds; 3) prepare special medicinal forms; 4) administer medicinal preparations into the organism as mixtures with polymers; 5) chemically combine medicinal preparations with polymers. The survey examines papers on the use of the latter two methods. The duration of action of novocaine, morphine, insulin, adrenalin, antibiotics, and other medicinal compounds is extended when administered simultaneously with polyvinylpyrrolidone. Prolonged-action medicinal compounds obtained by chemical combination with polymers can be divided into three groups: 1) complexes of preparations with polymers;

Card 1/2

L 62712-65

ACCESSION NR: AP5021702

2) medicinal compounds of prolonged action obtained by chemically combining the preparations by ionic bonding to polymers; 3) medicinal preparations of prolonged action obtained by chemical combination of preparations by covalent bonding to polymers. Orig. art. has 1 formula.

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute) 44, 55

SUBMITTED: 00

ENCL: 00

SUB CODE: LS

NO REF SOV: 066

OTHER: 055

JPRS

Card 2/2

SNEZHKO, D.L.; VIRNIK, A.D.; ROGOVIN, Z.A.

Synthesis of sulfo derivatives of cellulose. Zhur.prikl.
khim. 37 no. 5:1156-1158 My '64. (MIRA 17:7)

ACCESSION NR: AP4040526

S/0080/64/037/006/1334/1340

AUTHOR: Kuznetsova, V. A.; Kryazhev, Yu. G.; Rogovin, Z. A.;
Toroptseva, T. N.

TITLE: Synthesis of graft copolymers of 2-methyl-5-vinylpyridine,
acrylic, or methacrylic acid

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 6, 1964, 1334-1340

TOPIC TAGS: copolymer, graft copolymer, pyridine, 2-methyl-5-vinyl-,
acrylic acid, methacrylic acid, poly(vinyl chloride), ftorlon,
polyethylene, polycaprolactam, ion exchange material, current con-
ductive material, chemically stable material, free radical polymeri-
zation

ABSTRACT: Graft copolymers of chemically stable water-repellant
polymers with electrically dissociating monomers have been synthe-
sized. Free radical graft copolymerization of 2-methyl-5-vinyl-
pyridine, acrylic, or methacrylic acid on swollen films, fibers,
and fabrics of poly(vinyl chloride) ftorlon, polyethylene, or poly-
caprolactam yielded materials with an ion-exchange capacity of
Card 1/2

ACCESSION NR: AP4040526

1—3.5 mg-equiv/g, which swell in aqueous media and exhibit high mechanical strength and low electrical resistivity in the swollen state. Films of polyethylene-methacrylic acid copolymers retain their strength and electrical conductivity after immersion for six months at 500C in a 40% KOH solution. Orig. art. has: 3 figures and 5 tables.

ASSOCIATION: none

SUBMITTED: 200Oct62

DATE ACQ: 06Jul64

ENCL: 00

SUB CODE: OC

NO REF SOV: 001

OTHER: 000

Card 2/2

GULINA, A.A.; LIVSHITS, R.M.; ROGOVIN, Z.A.

Synthesis of graft copolymers of cellulose on the redox system cellulose - Fe^{2+} - H_2O_2 . Khim. volok. no.3:29-32 '65. (MIRA 18:7)

1. Moskovskiy tekstil'nyy institut.

KHOMYAKOV, K.P.; VIRNIK, A.D.; USHAKOV, S.N. [deceased]; ROGOVIN, Z.A.

Synthesis of ester of dextran and polentanic acid. Khim.prirod.
soed. no.4:245-246 '65.

(MIRA 1981)

1. Moskovskiy tekstil'nyy institut. Submitted March 29, 1965.

GABRIYEL'YAN, G.A.; STANISLAVENKO, G.I.; RUGOVIN, V.A.

Production and properties of fibers from the copolymer of
acrylonitrile with diketene. Khim. volok. no.6:13-16 '65.
(MIRA 18:12)

1. Moskovskiy tekstil'nyy institut. Submitted December 8,
1964.

L 1354-66 EPF(c)/EWT(m)/ETC/EWG(m)/I/EWP(j) RPL DS/WW/RM

ACCESSION NR: AP5024397

UR/0286/65/000/015/0080/0080

678.542

678.744.322-13

AUTHOR: Rogovin, Z. A.; Virnik, A. D.; Sharkova, Ye. F.

TITLE: A method for producing a graft copolymer. Class 39, No. 173404

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 15, 1965, 80

TOPIC TAGS: graft copolymer, cellulose plastic, acrylic plastic, methacrylate plastic, ion exchange resin, radical polymerization

ABSTRACT: This Author's Certificate introduces: 1. A method for producing a graft copolymer by radical graft copolymerization of cellulose and an ester of acrylic or methacrylic acid. A wider selection of monomers which can be grafted to cellulose is provided by using glycidylacrylate or glycidylmethacrylate. 2. A modification of this method in which an ion-exchange copolymer is produced by treating the finished graft copolymer in compounds which react with its α -oxide cycles, e. g. aqueous solutions of primary or secondary amines, sulfite or bisulfite of sodium.

ASSOCIATION: none

SUBMITTED: 17Jun63

NO REF SOV: 000

ENCL: 00

OTHER: 000

SUB CODE: MT, GC

Card 1/1

~~17878-66~~ EWT(m)/EPF(c)/EWP(j)/T RPL WW/RM
ACC NR: AP5025034 SOURCE CODE: UR/0286/65/000/016/0084/0084
AUTHORS: Rogovin, Z. A.; Kryazhev, Yu. G.
ORG: none
TITLE: Method for obtaining graft copolymers of cellulose with synthetic polymers.
Class 39, No. 173946
SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 84
TOPIC TAGS: graft copolymer, cellulose, polymerization, copolymerization, polymer
ABSTRACT: This Author Certificate presents a method for obtaining graft copolymers of cellulose with synthetic polymers by radical graft copolymerization. The method involves using decomposition products of hydroperoxide groups as the initiator. To introduce the hydroperoxide into the cellulose, aldehyde groups are added to the latter prior to polymerization.
SUB CODE: 07/ SUBM DATE: 02Apr63
nw
Card 1/1 UDC: 678.7-13.676.1:677.494.7-13.002.2

L 10184-66 EWT(m)/ETG/EWG(m) DS/RM
ACC NR: AP5028482 SOURCE CODE: UR/0286/65/000/020/0065/0065
AUTHORS: ^{44,55} Rogovin, Z. A.; ^{44,55} Virnik, A. D.; ^{44,55} Sergeyeva, L. M. ⁵²
ORG: none ^B
TITLE: Method for obtaining cation-exchange materials. Class 39, No. 175648 ¹⁵
SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 65
TOPIC TAGS: ion exchanger, ion exchange resin, ion exchange, polymer, cation ex-
changer
ABSTRACT: This Author Certificate presents a method for obtaining cation-exchange
materials by treating polyvinylalcohol or products derived from the latter with
polyfunctional acids. To obtain thermally and chemically stable materials mono- and
di-(3,6,8-trisulfo-1-naphthylamino) derivatives of chlorotriazines are used as poly-
functional acids.
SUB CODE: 11, 07/ SUBM DATE: 19Jun63
Card 1/1 ² UDC: 661.183.123.2:678.744.72